

**California Department of Public Health
Division of Drinking Water and Environmental Management**

**Technical, Managerial and Financial
Capacity Criteria**

for

**Change of Ownership for Community Public
Water Systems**

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ACRONYMS

ASDWA	Association of State Drinking Water Administrators
AWWA	American Water Works Association
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CHSC	California Health and Safety Code
CIP	Capital Improvement Plan
LPA	Local Primacy Agency
NEPA	National Environmental Protection Act
SDWA	Safe Drinking Water Act
SRF	State Revolving Fund
SWAP	Source Water Assessment and Protection Program
SWRCB	State Water Resources Control Board
TMF	Technical, Managerial and Financial Capacity
USEPA	United States Environmental Protection Agency

Introduction

The 1996 federal Safe Drinking Water Act (SDWA) introduced the concept of Technical, Managerial and Financial (TMF) Capacity for public water systems. This concept involves a public water system having the capability through its financial resources, technical resources, organizational structure and personnel to comply with all applicable drinking water standards and regulations. In addition, the concept of capacity involves being able to plan for the future and use the necessary resources to keep the water system in compliance. The federal SDWA encourages, and in some circumstances requires, states to incorporate the TMF Capacity concept into their drinking water regulatory program. The Department of Health Services (Department) is developing and implementing a strategy to incorporate TMF Capacity development into California's drinking water regulatory program. The TMF Capacity Criteria contained in this document is a part of the Department's TMF Capacity development strategy.

The definitions of Technical, Managerial, and Financial Capacity given in guidance published by the United States Environmental Protection Agency (USEPA) are very general in nature. As such, the Department has developed criteria to use in assessing the TMF Capacity of public water systems in the state of California. However, because implementation of this criteria will vary based on the type of water system being assessed, six sets of TMF Capacity Criteria have been derived from the overall criteria, three for community water systems (New, Change of Ownership and SDWSRF) and three for noncommunity water systems (New, Change of Ownership and SDWSRF). **This document contains the TMF Capacity Criteria that will be applied to community water systems changing ownership.**

For each element of the TMF Capacity Criteria contained in this document, an introductory paragraph is given that describes why developing capacity in that area is important. Following this paragraph, a section entitled *Documentation* is included. In order for the Department or the Local Primacy Agency (LPA) to evaluate a water system's ability to comply with a particular TMF Capacity element, the information listed under *Documentation* must be submitted for review. Following the section on documentation, a section entitled *Evaluation* is included that lists the items that will be considered by the Department or LPA in evaluating a water system's TMF capacity.

The Department encourages all public water systems to review the TMF Capacity Criteria contained in this document and to work toward acquiring and maintaining that capacity. To this end the Department will implement a strategy to assist public water systems in meeting these TMF Capacity Criteria. However, these criteria are only required of the systems described below.

Systems Changing Ownership

The 1996 federal SDWA requires all states participating in the Safe Drinking Water State Revolving Fund (SDWSRF) program to obtain legal authority to ensure all new community and nontransient noncommunity water systems demonstrate adequate TMF Capacity before being allowed to commence operation. The 1996 federal SDWA also prohibits any state participating in the SDWSRF program from providing financial assistance to any public water system that does not have the TMF Capacity to comply with all SDWA requirements or cannot achieve adequate TMF Capacity with the SDWSRF financial assistance.

In response to these federal requirements, Section 116540 of the California Health and Safety Code was enacted. This section states that, *"No public water system that was not in existence on January 1, 1998, shall be granted a permit unless the system demonstrates to the department that the water supplier possesses adequate financial, managerial, and technical capability to assure the delivery of pure, wholesome, and potable drinking water. This section shall also apply to any*

change of ownership of a public water system that occurs after January 1, 1998.” It should be noted that the California SDWA goes beyond the federal requirements by applying the TMF Capacity Criteria to transient noncommunity water systems and to water systems changing ownership.

The Department will use the Criteria elements contained in this document to assess the TMF Capacity of community water systems. How each TMF Capacity element will be applied to new systems, systems undergoing a change of ownership and SRF applicants is shown in the Applicability Chart given on page 3.

The following designations are used to indicate how each element of the TMF Capacity Criteria will be applied to new systems, systems undergoing a change of ownership, and SRF applicants:

- Mandatory:** Compliance with element is required at the time a permit.
- Necessary:** Compliance with element will be required within a specified time frame determined by the Department or LPA, taking into account the size and condition of the water system.
- Although compliance may not be required at the time a permit application is submitted, information needed to evaluate a water system’s ability to comply with the element must be submitted no later than the application deadline.

TMF Capacity Criteria Applicability Chart Community Water Systems Changing Ownership.

	Change of Ownership
Technical Capacity	
5. System Description	N
6. Source Capacity Assessment	N
7. Technical Evaluation	
Item 1) Consolidation Feasibility	N
Items 2-5) Technical Evaluation	N
8. Operations Plans	N
9. Certified/Qualified Operators	N
10. Training	N
Managerial Capacity	
1. Ownership	M
2. Organization	M
3. Water Rights	M
11. Emergency/Disaster Response Plans	M
Financial Capacity	
4. Budget Projection	M
12. Capital Improvement Plan	N
13. Budget Control	N

Applicability may be changed from *Recommended* to *Necessary* or *Mandatory* depending on the size and/or complexity of the water system.

Definitions:

M = Mandatory. Compliance with element is required at the time of permit issuance.

N = Necessary. Compliance with element will be required within a specified time frame.

MANAGERIAL CAPACITY - MANDATORY

1. Ownership

In order to determine accountability for compliance with California SDWA requirements, the owner(s) of the water system must be clearly identified. The state grants the authority for an organization, city or town, authority, cooperative, corporation or other entity to provide water to the public. State law, which specifies both the procedures for creating the entity as well as the powers, duties, and responsibilities of that entity, generally grants this authority. Documents that form the legal basis of the system's existence prescribe the conditions under which the system may legally operate and provide the framework for the operation and functioning of the water system. It is essential that the water system management understand the authority for their entity and any limitations/conditions of that authority. It is also essential that the system demonstrate that they own or control the facilities necessary for the operation of the system.

Documentation: The water system must submit the following information:

- 1) Description of the type of system ownership (e.g., sole proprietorship, partnership, corporation, mutual, governmental agency) along with the name(s), address(es), and phone number(s) of the owner(s). A copy of the "deed" will document ownership and water rights.
- 2) If the water system is under temporary ownership (e.g., a developer), the eventual ownership and timing for the change in ownership must be described.
- 3) If land or major facilities that are essential to the reliable operation of the water system are not legally owned by the water system, the terms of the agreement for the long-term use of the land or facilities must be described. Examples of the type of agreements that must be described include easements for facilities on land not owned by the water system and agreements for the use of or leases for treatment facilities.
- 4) The owner of the water system must list all public water systems that are currently or have previously been owned by the applicant (solely or in partnerships, as corporations, etc.) Applicants must also list any water system that they previously operated or are currently operating under contract for another owner or entity.
- 5) In the case of a sole proprietor, a plan must be submitted that details how the system will continue to be operated in the event the owner becomes incapable of carrying out this responsibility.
- 6) Disclosure of any encumbrances, trust indentures, bankruptcies, decrees, legal orders or proceedings or other items that may affect or limit the owner's control of the water system.

Evaluation: The following are to be considered in evaluating this TMF Capacity element:

- 1) The ownership must be a legal entity empowered by the State of California to manage and operate the public water system.
- 2) The duration of agreements for use of land or facilities not owned by the water system must be sufficient to ensure that the water system can continue to operate

its facilities, providing an uninterrupted and reliable source of water to its customers.

- 3) If the documentation submitted by the water system does not clearly show who the owner is and that the system has a legal right to the use of land and facilities (essential to the operation of the water system) that it does not own, then the applicant should be asked to supply a letter from their attorney giving this information and certifying the system's legal authority.

2. Organization

A clear description of the organization, including a functional organization chart, is essential for every water system. This establishes the lines of authority and communication between employees and management and helps to avoid confusion, mistakes, or misunderstandings in the daily operation and management of the system. It is also essential to define the respective roles of each person to avoid duplication and confusion, and to ensure that all essential functions are covered. Since small water systems may have a single individual performing multiple functions, it is also important to identify the percentage of time allocated to each function in order to ensure that each function is adequately covered.

Documentation: The water system must submit the following information:

- 1) Organization chart.
- 2) A complete description of the reporting relationships and primary responsibilities of all key personnel (including boards of directors or councils, employees and contract personnel) that will be involved in the management or operation of the water system. Information that shows how the organization functions, including who is responsible (name, position and title) for policy decisions, for ensuring compliance with state regulatory drinking water requirements and for day to day operations of the system. The responsibilities of operating personnel should be defined. For systems with boards or councils, the frequency of meetings must be specified.
- 3) If the person in charge of the operation has other responsibilities unrelated to the water system, the information must show the amount of time the operator will spend on water system operation. The Operations Plan may be used as part of this demonstration.
- 4) A description of the relevant training and experience that persons responsible for the management of the water system have received.
- 5) A description of how legal, engineering and other professional services are provided.
- 6) If a system contracts for management and/or operation of their system, a copy of the contract or summary of the contractor's duties and responsibilities must be provided, which must also include the amount of time to be spent performing the specified duties at this water system.

Evaluation: The following are to be considered in evaluating this TMF Capacity element:

- 1) The information must clearly indicate how the organization functions, who is responsible for policy decisions, for ensuring compliance with state regulatory drinking water requirements and for day to day operations of the system. Information that indicates a confusing and/or diffused primary responsibility may

indicate a need for restructuring the water system management or operation to comply with this TMF Capacity element.

- 2) Persons responsible must have sufficient time dedicated to reliably manage and operate the water system. For operators, this can be demonstrated by an analysis of the time it will take to operate all water system facilities, including treatment plants, on a routine basis compared to the time the operator is allocated to the water system. The system Operations Plan can be used to define the responsibilities of the operating personnel and to demonstrate adequate operator time dedicated to the water system as well as adequate number of operators.
- 3) If management and/or operation of the system are contracted, details must be provided which demonstrate that the water system can be reliably operated. The contract must define the functions the contractor will undertake and how much time they are devoting to it.
- 4) A copy of the system's incorporation articles, by-laws or governing ordinances should be requested, if necessary, to obtain a clear picture of the functional responsibility and authorities within the organization.

3. Water Rights

It is essential that the water system has a legal right to the quantity of water necessary to assure an adequate and reliable drinking water supply. This must be demonstrated for a new public water system and for systems changing ownership. For an SRF applicant, a demonstration of adequate water rights is required if the project being funded by the SRF program is dependent upon that right. A written copy of the water right (permit, license or other agreement) should be maintained as a part of the system records.

Documentation: The water system must submit the following information:

- 1) Information that describes the legal basis and authority for diversion or extraction of water. If groundwater is being pumped from a groundwater basin that has not been adjudicated, a statement to that effect is sufficient documentation to satisfy this requirement. A copy of the "deed" will document ownership and water rights.
- 2) If the source water is subject to permit requirements under the SWRCB, a copy of the water rights permit must be included.
- 3) Approval for extraction of water from an adjudicated groundwater basin must be demonstrated by confirming documents from the basin watermaster.

Evaluation: The following are to be considered in evaluating this TMF Capacity element:

- 1) The applicant has the responsibility to verify the legal basis and authority for diversion or extraction of water.
- 2) The water right must be sufficient to provide water for current users (taking into consideration other water sources such as those from unadjudicated groundwater basins).
- 3) If the documentation provided to demonstrate the system's water right is unclear, the system should be requested to provide a letter of confirmation from the authority that granted the water right.

4. Emergency/Disaster Response Plans

It has been the experience of the Department, with the multitude of major disasters in California over the last ten years, that many of the systems impacted by disasters have since taken steps to expand their required Emergency Notification Plan to include a Disaster Response Plan (who, how, and when) and to establish communication links with other utilities, agencies, and emergency service providers. As a result, they are much better prepared to continue minimum service levels and mitigate the public health risks from drinking water contamination that may occur during a disaster or other emergency event. In order to provide reliable water service and minimize public health risks from unsafe drinking water during emergencies, water systems will be required to have a plan that defines how it will respond to emergencies and/or disasters that are likely to affect its operation.

Documentation: The water system must submit an Emergency/Disaster Response Plan with clearly defined response procedures. The plan must:

- 1) Address all disasters/emergencies that are likely to occur in the water system's service area. As a minimum, all water systems must address earthquake and major fire emergencies. Other potential emergencies that may occur in a water system's service area include flooding, water outages and water contamination.
- 2) Designate responsible personnel and provide a clear chain of command and identify responsibilities.
- 3) Include an inventory of system resources that are used for normal operations and available for emergencies. This information should include maps and schematic diagrams; lists of emergency equipment; equipment suppliers; emergency contract agreements; and emergency water interconnections and/or sources.
- 4) Include a communication network, appropriate to the size and type of water system, that describes a designated location for an emergency operations center; emergency contact information for equipment suppliers; emergency phone and radio communication capabilities; coordination procedures with governmental agencies for health and safety protection, technical, legal, and financial assistance; and public notification procedures.
- 5) Include emergency procedures to quickly assess damage to water system facilities; provide logistics for emergency source activation and repairs; monitor progress of repairs and restoration; communicate with health officials and water users; and document damage and repairs.
- 6) Describe the steps that will be taken to resume normal operations and to prepare and submit reports to appropriate agencies.

Evaluation: The following are to be considered in evaluating this TMF Capacity element:

- 1) Plans submitted must address all of the above elements in sufficient detail to ensure adequate system response during an emergency.
- 2) Does the system belong to an emergency mutual aid organization? How much assistance can this organization actually provide in the event of an emergency in the water system's service area?

FINANCIAL CAPACITY - MANDATORY

5. Budget Projection

The budget projection is a written financial plan for the operation of the water system over the next five years. This is a critical feature of the TMF capacity assessment because it indicates whether the system's revenues and reserves will meet the system's expenses. It also is a necessary tool that will enable the water system to plan for future needs. The budget is the primary source of information for monitoring and controlling costs/expenses and ensuring the availability of adequate resources to meet the costs of operating the system. It also serves as an effective communication tool with consumers as to the full costs of providing safe, adequate, and reliable drinking water. Without this budget projection, there is no basis for judging how the system is doing financially or whether it will be able to meet future needs.

Documentation: The water system must submit the following information:

- 1) A detailed projection of anticipated revenues and expenditures for at least a five-year period. The budget projection shall also include the projected expenses to be incurred as a result of implementing the water system's CIP and its equipment replacement schedule and maintenance of equipment replacement reserves.
- 2) A consolidated financial statement (e.g., balance sheet and income statement) from the previous three years.
- 3) A copy of the current rate structure and the average annual cost of water per customer for the previous calendar year. For new public water systems: provide the proposed rate structure and estimated annual cost of water per connection.

Evaluation: The following are to be considered in evaluating this TMF Capacity element:

- 1) The analysis must indicate that rates combined with other revenue sources are sufficient to cover all listed expenditures. If the proposed revenues are overstated, or the expenditures understated, based on the previous two years of actual data, additional justification/information should be required.
- 2) Future anticipated revenues that are contingent upon a vote of the system users are generally not considered assured sources of revenue.
- 3) If anticipated revenues are based on an assumed "build-out" projection, this projection should be evaluated for reasonableness. In doing this, consultation with local planning authorities may be necessary. It may also be appropriate to require acquisition of a performance bond and include specific conditions in the permit as necessary.
- 4) If revenues are not sufficient to cover the proposed expenditures, the water system must submit a plan to increase revenues to cover expenditures.
- 5) For investor owned systems: the California Public Utilities Commission's review of the budget plan will be required.

TECHNICAL CAPACITY - NECESSARY

6. System Description

“As-built” maps or drawings that show the location of all of the facilities in the system and maps that show the existing and future service areas, sources of supply and contamination hazards, and other critical facilities are essential to the operation of any water system. To be useful beyond the date they are prepared, the water system should have a method to keep the maps updated as changes occur. Knowing the location, type of materials, etc., of water mains or other facilities is necessary in order to check, repair or replace them. Similarly, it is essential during an emergency to know where the isolation valves are.

Documentation: The water system must submit the following information:

- 1) A description of the as-built drawings maintained and procedure used to ensure as-built drawings are created for all new facilities. As-built drawings of new facilities must be drawn to scale, show location, size, construction material, and year of installation of each water main or other facility.
- 2) A map showing the location of the system’s existing service area, each water source, treatment facility, pumping plant, storage tank and pressure zone in the system, as well as all distribution system piping.

For water systems required to complete a ten-year growth projection (see Source Capacity Assessment & Evaluation, page 11), the map must include the projected ten-year growth boundaries.

For projects involving consolidation, include a physical map of the existing or proposed water system facilities that will be a part of the consolidation. The map should show the combined service area of the proposed consolidation. Based on the type of project, the Department may require a distribution system map to be submitted in order to better evaluate the application.

Evaluation: The following are to be considered in evaluating this TMF Capacity element:

- 1) The information must describe the as-built drawings maintained by the system and the procedure that has been adopted to ensure all new facilities will have as-built drawings prepared and maintained. The description of as-built drawings that are currently being maintained is for information only. Assessment of capacity is to be based only on the adequacy of the system’s procedure for ensuring as-built drawings are prepared and maintained for all new facilities.
- 2) The service area map(s) must be accurate and include the location of all the water system’s physical facilities.

7. Source Capacity Assessment and Evaluation

The purpose of this element is to have each community water system evaluate their anticipated growth and water demand and compare this to the existing capacity of their sources and system to deliver water. This element will allow a water system to understand when changes or additions to their sources are needed and plan accordingly given the lengthy time for developing a new source of supply due to water rights, environmental review and permit requirements. Additionally, the 1996 federal SDWA requires the state to delineate and assess contamination hazards for all sources of supply for public water systems, new as well as existing.

Documentation: The water system must submit the following information:

- 1) A ten-year growth projection of the water system service area and customer base that is consistent with local land use plans and a ten-year projection of water demand. An analysis of the capacity of the water source(s) to meet this demand must also be included and contain the following information:
 - a) Documentation of the amount of water needed to meet current annual and maximum day demand and estimates of the amount of water needed to serve the annual and maximum day demand over the projected ten-year growth period.
 - b) Description of sources currently used or proposed to be used in meeting the projected demand.
 - c) A plan and schedule to obtain additional water rights, if needed, to serve customer growth for at least the next ten years.
 - d) Description of groundwater aquifers used or proposed to be used including groundwater levels and draw down patterns.
 - e) The safe yield of all well and surface water sources used to supply the water system.
 - f) Existing source pumping and conveyance capacity together with raw and finished water storage.
- 2) Documentation of procedures used by the water system to assess increasing concentrations in water quality parameters from an evaluation of source water quality monitoring data.
- 3) For proposed sources, provide a characterization of the water quality, including a comparison with established or proposed drinking water standards.
- 4) A map of the location and a written description of all major sources of contamination, actual or potential, within the service area or in adjacent areas that could affect the system sources (e.g., waste disposal sites, landfills, feedlots, etc.).

Evaluation: The following are to be considered in evaluating this TMF Capacity element:

- 1) The water system must demonstrate sufficient water supply or have a plan and schedule to reliably supply current customers and the projected growth over the next ten years. The system must also demonstrate adequate pumping and conveyance capacity or have a plan and schedule to increase existing capacity to meet projected demand.

- 2) Consistency of growth projections with local land use plans can be demonstrated with documentation from the appropriate local planning authority. This documentation may take the form of permits issued by the local planning agency, CEQA/NEPA certification, or specific written concurrence. New water systems or systems projected to experience significant growth may be required to submit specific written concurrence.
- 3) The plan and schedule for obtaining additional water rights should define where the additional water will be obtained and an assessment should be made as to whether its likely that the right will be granted. The State Water Resources Control Board (SWRCB), Division of Water Rights, should be contacted if there are any questions about a water system's application for additional water rights.
- 4) The procedure submitted for assessing increasing concentrations in water quality parameters must clearly enable the water system to regularly review its water quality data for water quality parameter trends.
- 5) For proposed sources, provide water quality data showing compliance with all applicable drinking water standards.
- 6) Review the construction of the system water sources in conjunction with types and locations of major sources of contamination.
- 7) The source assessment for actual/potential sources of contamination must include all required elements of the California Drinking Water Source Assessment and Protection Program.

8. Technical Evaluation

CHSC, Section 116555(c) requires that a public water system provide a reliable and adequate supply of pure, wholesome, healthful, and potable water at all times. For new systems, this determination is part of the permit process. However, for existing community systems, a technical evaluation of the physical facilities and the operation of the system is essential in order to assess the capacity of the system to reliably meet drinking water standards and to properly budget for needed improvements. The evaluation is necessary, not only to assess the condition of existing facilities, but to also project the need for replacement of existing facilities. The technical evaluation will also assess the need for new facilities to accommodate system growth over the next ten years. This will then enable the utility to identify and prioritize improvements needed to reliably comply with existing and projected drinking water standards, develop a prioritized capital improvement plan, and assess finances needed to support the improvements.

Item 1) Consolidation Feasibility:

Items 2 - 5) Technical Evaluation:

Documentation: The water system must submit the following information:

- 1) **Consolidation Feasibility** – An assessment to identify all existing public water systems located in the immediate proximity of the existing or proposed water system. The assessment must determine the feasibility of incorporating into an existing water system or being owned, operated or managed by another agency.
- 2) A technical evaluation of the system facilities with respect to its capacity to reliably meet current and proposed drinking water standards. The evaluation must:

- a) Document the system's ability to comply with the California Waterworks Standards contained in California Code of Regulations (CCR), Title 22, Chapter 16.
- b) Assess all treatment facilities for compliance with applicable regulations, e.g., the Surface Water Treatment regulations (CCR, Title 22, Chapter 17). This assessment must address all regulatory requirements that apply, as well as the treatment facility's ability to reliably produce water that meets the appropriate water quality standards. The capacity of each unit process at a treatment plant must be assessed to determine the limiting flow through the treatment plant.
- c) Assess the source, storage and distribution system's design capacity and operational ability to provide the pressure specified in CCR, Title 22, Section 64566 and including local fire flow requirements. A hydraulic analysis of the transmission and distribution system, to ensure reliable compliance with pressure standards under daily, peak daily and peak monthly demands, must be conducted and included in the evaluation if:
 - The system is proposing to expand its existing distribution system within the ten-year planning period, or
 - The system is currently experiencing pressure problems.A pressure survey of the system would be an acceptable alternative to the hydraulic analysis as long as the plan for conducting the survey is approved by the Department before the survey is conducted.
- d) Show that the water system has the ability to accurately and continuously measure the quantity of water produced from each water source, with the exception of emergency or standby sources, in order to determine total production. Information documenting the type of meters used as well as routine procedures carried out to ensure their accuracy must be included. Records showing daily or monthly water production from each source is acceptable documentation.

- 3) An evaluation of the condition and remaining service life of existing facilities.
- 4) An evaluation that identifies all critical facilities and/or equipment whose failure would result in a water outage and/or a water quality failure and the adequacy of the system's plans/procedures for dealing with such failures.
- 5) A prioritized list of deficiencies and needed system improvements to serve as a basis for a five-year Capital Improvement Plan (CIP).

Evaluation:

The following are to be considered in evaluating this TMF Capacity element:

- 1) In cases of very simple existing systems, the Department/LPA sanitary survey evaluations may suffice for the technical evaluation. The sanitary survey report should be reviewed to determine if it documents all the information required for this evaluation. Additional information should be requested from the water system if required.
- 2) All treatment facilities must be fully described along with their purpose. Where specific requirements are given in state law or regulations, the evaluation must clearly show to what degree the facilities comply. An assessment of the facility's effectiveness in reducing the constituent it was designed to remove must also be included. Deficiencies with respect to regulatory requirements or treatment

effectiveness must be identified. The capacity of each treatment process must also be specified.

- 3) The system must submit adequate documentation to show the water system can maintain the pressure specified in CCR, Title 22, Section 64566. This documentation may take a number of forms and does not have to be the same for all parts of the distribution system. A description of physical facilities (e.g., pipe sizes, tank elevations, pump capacities, etc.) may be sufficient to document this. A hydraulic analysis or pressure survey may also be used to document the system's ability to maintain the required pressure. Whatever documentation is submitted must cover the entire distribution system.
- 4) If a hydraulic analysis is required it must cover all parts of the system where pressure problems are occurring or likely to occur as a result of system expansion. The analysis must clearly document the model used and how the data for it was obtained. In addition, it must specifically state all assumptions used to construct the model and to perform the actual analysis. The hydraulic conditions analyzed must be given and must be realistic to what the system does or will actually experience. The results of at least two conditions analyzed must be validated against actual system conditions.
- 5) If storage capacity is relied on to maintain pressures during peak demand periods, then the data used to determine the required storage volume must be in the technical evaluation, including historical production and/or use records. All storage facilities must be documented (e.g., location, pressure zone(s) served, capacity of facilities that fill each tank). The storage volume per connection value must be comparable to other water systems in the general area that are in compliance with pressure requirements or an explanation given of why it is different. The storage volume must be sufficient to maintain the pressure specified in CCR, Title 22, Section 64566 throughout the distribution system under maximum system demands. If the system is used for fire protection, the storage volume must also include sufficient storage to provide fire flow.
- 6) The type of production meters used as well as the procedures used to ensure the meters are giving accurate readings must be included with the documentation. Adequate records of production data must also be submitted to demonstrate the system is recording this data on a regular basis.
- 7) The design basis for facilities for new public water systems and SRF applicants should include the criteria used that governed the sizing of the facility (e.g., flow rate, loading rate of each unit process for treatment plants, etc.) as well as documentation of the source of the design basis (e.g., Ten States Standards, AWWA or other design handbooks or manuals).

9. Operations Plans

There are numerous activities that are important to the operation and maintenance of a water system where failure to perform them on a routine basis can lead to degradation of the quality of water and result in an increased health hazard. Systems providing any type of water treatment are required to develop a treatment plant Operations Plan. Well managed and operated systems have an Operations Plan that addresses all aspects of water system operation. By developing an Operations Plan, the system is assured that its operators are aware of the activities that need to be conducted to protect the quality of the water and maintain system facilities to assure maximum life. Also, many smaller systems have only one operator position with frequent turnover in personnel. New operators coming on board may not

understand the procedures necessary to properly operate and maintain the system. The existence of an Operations Plan provides the necessary guidance for persons unfamiliar with the system.

Documentation: The water system must submit the following information:

- 1) For systems utilizing a surface water source, the water system must have a Department approved Surface Water Treatment Rule Operations Plan.
- 2) An Operations Plan for any other treatment provided (including chlorination). The plan should address treatment unit operational procedures, process monitoring, response to violations, and reporting.
- 3) A system Operations Plan that addresses how the system will be operated to comply with drinking water requirements and the California Waterworks Standards. Water system managers should develop the Plan with operating personnel and establish procedures to review the plan annually with operators. This plan must not be more than five years old, and as a minimum, must address the following items:
 - a) Daily operational practices.
 - b) Emergency operational practices.
 - c) Flushing dead-end mains.
 - d) Storage tank inspection and cleaning.
 - e) Main repair and replacement.
 - f) Consumer complaint response procedures.
 - g) Maintenance and testing of backflow prevention devices.
 - h) Inspecting and exercising water main valves.
 - i) Maintenance of master flow meters.
 - j) Responsibilities of operating personnel.
 - k) Operation of all production, transmission and distribution facilities.
 - k) Record keeping.
- 4) Procedures to review and update all Operations Plans every five years.

Evaluation: The following are to be considered in evaluating this TMF Capacity element:

- 1) Plan(s) submitted must be practical and address all of the above elements in sufficient detail to ensure adequate operation of the water system.
- 2) New water systems must have a system Operations Plan approved by the Department before the system starts operation.

10. Certified/Qualified Operators

The 1996 federal SDWA requires states to comply with guidelines being developed by the United States Environmental Protection Agency (USEPA) for an adequate operator certification program. The guidelines are to be completed by February 1999 and the state then has until February 2001 to comply. The USEPA, in developing these guidelines in cooperation with the National Drinking Water Advisory

Council, the American Water Works Association (AWWA), the Association of State Drinking Water Administrators (ASDWA) and other stakeholders, concluded that it was essential that all community and nontransient noncommunity water systems be under the operational control of an appropriately certified operator in order to assure reliable compliance with drinking water standards. The CCR, Title 22, requires certified operators for public water systems.

Documentation: The water system must submit the following information:

- 1) For existing or proposed water treatment plants, the name and grade of certification of each operator that will be operating the system.
- 2) Provide the name and qualifications of each person that will be operating the system.
- 3) If the operator(s) have not been hired, a plan and schedule for hiring one.
- 4) A description of relevant training and experience that persons responsible for the operation of the water system have received.

Evaluation: The following are to be considered in evaluating this TMF Capacity element:

- 1) All public water systems with existing water treatment plants must demonstrate that they comply with current state operator certification regulations. Systems proposing new water treatment plants must demonstrate that they will have an appropriately certified operator prior to commencement of the operation of the treatment facility.
- 2) Restricted Operator Certification: If the system is located in a remote area, it may propose to employ a person who holds or obtains a Limited Certificate as provided in CCR, Title 22, Section 63825. In this case, information provided must demonstrate that the person is qualified to operate the specific treatment and distribution facilities.
- 3) If the public water system has no treatment plant (e.g., distribution only or untreated groundwater source), they must have operator(s) 'qualified' to operate the system in accordance with state requirements

11. Training

Competent management and operation of a public water system is critical in providing a safe and reliable water supply to system customers. This task has become extremely complex over the last 15 years. With adoption of new drinking water standards and increased emphasis on consumer education and involvement, the job can be expected to become even more complex over the next decade. In order to competently comply with existing requirements and stay current with new requirements, new technologies, and newly identified hazards, all water system personnel must be committed to maintaining an adequate level of training through continuing education.

Documentation: The water system must submit:

A plan for keeping the management and operators current with the requirements of managing and operating a water system. This plan can be submitted as part of the water system's Operations Plan.

Evaluation: The following are to be considered in evaluating this TMF Capacity element:

- 1) Managers of public water systems should continue to receive training in utility management, drinking water regulations and resource management (e.g., personnel, budget and facilities) in order to effectively manage public water systems.
- 2) Any person operating a public water system of any type must continue to receive training appropriate to the type and size of the system.

FINANCIAL CAPACITY - NECESSARY

12. Capital Improvement Plan/Equipment Replacement

The CHSC, Article 3, Section 116375(g) also requires the Department to adopt rules that define the minimum financial assurances necessary for water systems to demonstrate their capability to provide for the upgrading of the system. The development of a prioritized CIP is a common way for water systems to demonstrate this capacity. Improvements would be those necessary to resolve deficiencies identified in the technical evaluation as well as those necessary to accommodate growth in the system's service area. The financing plan for the CIP is then reflected in the systems operating budget in order to fully assess the financial capabilities of the water system.

The equipment (e.g., pumps, controls, valves, pipes, etc.) in every public water system have a useful life and will eventually require replacement. Frequently, systems that fail to maintain reserve accounts or debt authority are unable to replace old, worn out equipment on a timely basis. Depending on the piece of equipment that fails and the timing, this can create significant public health risks. This element requires the utility to identify a proposed schedule for replacement and to begin building a replacement reserve to fund routine replacement of equipment, hopefully before it fails and creates a health hazard. If this account were not funded, it would have to be reflected in the system's CIP.

Documentation: The water system must submit the following information:

- 1) A prioritized CIP based on the results of the Technical Evaluation (TMF Capacity Criterion No. 3). Any facilities requiring construction within the five-year budget period should be identified with proposed sources of funding. (e.g., bonds, loans, grants, increased rates, etc.). This plan should be reflected in the five-year budget plan.
- 2) Description of the method that the water system will use to develop the funds to replace old and outmoded equipment, facilities, and pipes in the system. The estimated useful life of major system components must be specified.

Evaluation: The following are to be considered in evaluating this TMF Capacity element:

- 1) The Department will use its' sanitary survey of the water system and engineering expertise to judge the adequacy of the plan.

13. Budget Control

The budget of a water system is basically a financial plan for the existing and future operation of the water system. It is essential that the budget be adhered to or consciously modified to reflect a change in direction. In order to accomplish this, the water system must establish budget controls and procedures for reporting to appropriate levels of authority. There must be periodic reviews of the budget status and modification of the budget if necessary. This will ensure that revenues are collected, expenses are controlled, and reserve accounts are maintained.

Documentation: The water system must submit the following information:

- 1) A description of the water system's budget control and reporting procedures established to ensure continuing financial viability of the system.
- 2) A description of the water system's control procedures established to ensure that there is no commingling of revenue sources (e.g., moneys from the SRF) that is prohibited by state and federal law.

Evaluation: The following is to be considered in evaluating this TMF Capacity element:

The information to be submitted must be provided by a Certified Public Accountant or appropriately qualified financial officer of the water system. The information should describe the budget control procedures in sufficient detail to provide assurances to the Department that the manager/owner of the system will receive the necessary budget information on a timely basis to ensure continued delivery of a safe, adequate water supply.